Bull SAS
NovaScale R630
(Intel Xeon X5355, 2.66GHz)

CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: NEC Corporation

CPU Name: Intel Xeon X5355
CPU Characteristics: 2.66 GHz, 2x4 MB L2 shared, 1333 MHz bus
CPU MHz: 2667
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
CPU(s) orderable: 1.2 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 8 MB I+D on chip per chip, 4 MB shared / 2 cores
L3 Cache: None
Other Cache: None
Memory: 12 GB (6x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 2x73.2 GB SAS, 15000 RPM, Software RAID Level1
Other Hardware: None

Software
Operating System: Red Hat Enterprise Linux AS release4 (Update 5),
Kernel 2.6.9-55.0.12.ELsmp on an X86_64
Compiler: Intel C++ Compiler for Linux32 and Linux64
version 10.1 Build 20070913 Package ID:
l_cc_p_10.1.008
Auto Parallel: Yes
File System: ext3
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: MicroQuill SmartHeap library 8.1
binutils-2.17.tar.gz. Version 2.17
ft Server Control Software 5.0-0231

SPECint2006 = 20.7
SPECint_base2006 = 17.4
SPEC CINT2006 Result

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Results Table

<table>
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<th>Ratio</th>
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<td>16.1</td>
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<td>21.5</td>
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<td>21.6</td>
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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
OMP_NUM_THREADS set to number of cores

Platform Notes

This Express5800/320Fc-MR is a fault-tolerant server.
Two modules are installed in this server and each module has "2CPU chips,12GB memory",
so total "4CPU chips,24GB memory" are on this server.
With lockstep technology, these two modules communicate each other
and handle the same instructions at the same time,
then logically the "CPU,Memory" is recognized as "2CPU chips,12GB memory" by the OS.

General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode

The NEC Express5800/320Fc-MR(Intel Xeon X5355) and
the Bull NovaScale R630 (Intel Xeon X5355, 2.66GHz) models are electronically equivalent.
The results have been measured on a NEC Express5800/320Fc-MR(Intel Xeon X5355) model.

Base Compiler Invocation

C benchmarks:
  icc

Continued on next page
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Base Compiler Invocation (Continued)

C++ benchmarks:
icpc

Base Portability Flags

- 400.perlbench: -DSPEC_CPU_LINUX_IA32
- 462.libquantum: -DSPEC_CPU_LINUX
- 483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
- -fast -vec-guard-write -parallel -par-runtime-control

C++ benchmarks:
- -xT -ipo -O3 -no-prec-div -Wl,-z,muldefs
- -L/opt/SmartHeap_8.1/lib -lsmartheap

Base Other Flags

C benchmarks:
- 403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
- icc

- 401.bzip2:/opt/intel/cce/10.1.008/bin/icc
  -L/opt/intel/cce/10.1.008/lib
  -l/opt/intel/cce/10.1.008/include

- 456.hmmer:/opt/intel/cce/10.1.008/bin/icc
  -L/opt/intel/cce/10.1.008/lib
  -l/opt/intel/cce/10.1.008/include

C++ benchmarks:
icpc
**SPEC CINT2006 Result**

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### Peak Portability Flags

- 400.perlbench: `-DSPEC_CPU_LINUX_IA32`
- 401.bzip2: `-DSPEC_CPU_LP64`
- 456.hmmer: `-DSPEC_CPU_LP64`
- 462.libquantum: `-DSPEC_CPU_LINUX`
- 483.xalancbmk: `-DSPEC_CPU_LINUX`

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### Peak Optimization Flags

**C benchmarks:**

- 400.perlbench: `-prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias -prefetch`
- 401.bzip2: `-prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -auto-ilp32`
- 403.gcc: `-fast -inline-cALLOC -opt-malloc-options=3`
- 429.mcf: `-fast -prefetch`
- 445.gobmk: `-prof-gen(pass 1) -prof-use(pass 2) -xT -O2 -ipo -no-prec-div -ansi-alias -auto-ilp32`
- 458.sjeng: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4`
- 462.libquantum: `-fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always -vec-guard-write -opt-malloc-options=3 -parallel -par-runtime-control`
- 464.h264ref: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -ansi-alias`

**C++ benchmarks:**

- 471.omnetpp: `-prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap`
- 473.astar: `-prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap`
- 483.xalancbmk: `basepeak = yes`
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Peak Other Flags

C benchmarks:
403.gcc -Dalloca=_alloca

The flags file that was used to format this result can be browsed at

You can also download the XML flags source by saving the following link:

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